

WHAT IS CLAIMED IS:

1. A machining machine for lenses comprising: a first workpiece drive configured as a transport receptacle, with a workpiece spindle, a workpiece changer for exchanging workpieces between the workpiece drive and a workpiece stock, and a machining station for machining a workpiece, wherein
 - a) the workpiece spindle of the workpiece drive can rotate about an axis of rotation (c1),
 - b) the workpiece drive can swivel about a first swivel axis (b1) arranged at right angle to the axis of rotation (c1) and
 - c) the workpiece drive can turn about a turning axis (k) arranged at right angles to the first swivel axis (b1),wherein at least one second workpiece drive is provided and
 - d) the second workpiece drive has a spindle which can turn about an axis of rotation (c1, c2),
 - e) both workpiece drives can swivel about a first swivel axis (b1, b2) arranged at right angles to the respective axis of rotation (c1, c2),
 - f) both workpiece drives are driven in translatory motion and can each move in the direction of a translatory axis of displacement (x1, x2), arranged at right angles to the first swivel axis (b1, b2),
 - g) both workpiece drives can turn together about the turning axis (k).
2. The device according to Claim 1, wherein the workpiece drives have a common translatory lifting axis, arranged in parallel with the swivel axis (k), being mounted and driven to move in its direction.
3. The device per Claim 1, wherein two workpiece changers are provided and each of the workpiece changers can swivel about a swivel axis (s)

arranged at right angles to the lifting axis (w) between a position W1 beneath the workpiece drive and at least one position W2 above the workpiece stock and is driven in translatory motion in the direction of a lowering axis (n1, n2) arranged in parallel with the lifting axis (w).

4. The device according to Claim 1, wherein the workpiece can be transported by the workpiece changer between a position beneath the workpiece drive and a position above the workpiece stock and can be swiveled through 180° in this process.
5. The device according to Claim 1, wherein the machining station is configured as a polishing station and has at least two polishing plates, each of which are driven and guided to turn about a polishing axis (p1, p2) and move in the direction of a translatory telescopic axis (z1, z2), arranged in parallel with the polishing axis (p1, p2).
6. The device according to Claim 5; wherein the respective polishing plate has an air-cushioned telescopic drive, able to turn about the polishing axis (p1, p2) and move in the direction of the telescopic axis (z1, z2), while the polishing plate is connected via a bellows and a universal joint to the polishing axis (p1, p2).
7. The device according to Claim 6, wherein the telescopic drives of the polishing plates have a common motor and are connected to it via a traction means, such as a poly-V-belt.
8. The device according to Claim 5, wherein the polishing plates are each coordinated with a tool changer or a common tool changer, having at least one tool magazine for polishing tools.

9. The device according to Claim 8, wherein the tool changer is driven and can move in the direction of a translatory transport axis (t_1 , t_2) and in the direction of a translatory exchange axis (a_1 , a_2), arranged at right angles to this.
10. The device according to Claim 8, wherein the tool magazine is configured as a revolving drum, and the drum is coordinated with a liquid container, by which at least a part of the tool can be wetted with liquid by the turning of the drum.
11. The device according to Claim 8, wherein the tool magazine has a quick locking element for securing to the particular turning axis and a securing element determining the relative position within the machine.
12. The device according to Claim 1, wherein a washing station is provided with at least two washing places, which can be brought into a position S underneath the workpiece drive.
13. The device according to Claim 12, wherein the washing station can move in translatory motion in the direction of a lifting axis (h).
14. The device according to Claim 1, wherein the workpiece spindle is connected to a swivel motor having the first swivel axis (b_1 , b_2), wherein the swivel motor is arranged via a translatory carriage having the displacement axis (x_1 , x_2) on a common swivel unit having the turning axis (k), which can swivel about the turning axis (k) between a position A1 in the region of the workpiece changer and a position A2 in the region of the machining station.

15. The device according to Claim 14, wherein the respective translatable carriage can move via a circulating ball spindle in the direction of the translatable axis and the circulating ball spindle is driven via a toothed belt, while both translatable carriages have a common or a separate guide rail.
16. The device according to Claim 1, wherein the spindle drive is configured as a continuous direct drive.
17. The device according to Claim 14, wherein the swivel unit is configured as a swivel plate and is driven to turn about the turning axis (k) by a swivel arm with a lift cylinder.
18. A method for operating a machining machine according to Claim 2, wherein at least the lifting motion in the direction of the lifting axis (w) and the swivel motion about the turning axis (k) occurs in common for both tool drives.
19. A method for operating a machining machine according to Claim 1, wherein the individual motion sequence of the two swivel axes (b1, b2) and the two displacement axes (x1, x2) is attuned while machining the lenses, so as to avoid a collision of the spindles.
20. A method for operating a machining machine according to Claim 8, wherein
 - a) the tool magazine is detached for removal from the machining machine and kept outside in liquid for wetting;
 - b) the tool magazine is installed in the machine and fastened with regard to the definite position.